AMENDMENTS TO THE CLAIMS

1. (Original) An electric power assisted steering apparatus for a vehicle having a steering wheel and road wheels, comprising:

a steering mechanism, which operatively connects said steering wheel to said road wheels of the vehicle;

an electric motor operatively connected to said steering mechanism;

a torque sensor adapted to produce a first output signal indicative of the torque carried by a portion of said steering mechanism;

a vehicle speed sensor for producing a second output signal indicative of the speed of said vehicle;

a signal processing unit adapted to receive said first signal and second signal and to produce a torque demand signal representative of a torque to be applied to said steering mechanism by said motor; and

a motor drive stage adapted to provide a drive current to said motor responsive to said torque demand signal,

wherein said apparatus includes torque limiting device, arranged to limit the magnitude of said torque to be applied to said steering mechanism to a maximum of a value that increases in time from a first value to a second value at a rate that is dependent on said second signal.

2. (Original) An electric power assisted steering apparatus of claim 1 wherein said torque limiting device is arranged to limit the magnitude of said torque when said apparatus is powered-up.

3. (Original) An electric power assisted steering apparatus of claim 1 further comprising a speed mapping device, arranged to generate from said vehicle speed a torque limit increase signal indicative of a rate at which said torque limit is to increase.

4. (Original) An electric power assisted steering apparatus of claim 3 wherein said the torque limit increase rate for a first vehicle speed is higher than said torque limit increase rate at a second, higher, vehicle speed.

5. (Original) An electric power assisted steering apparatus of claim 3 wherein said speed mapping device determines the torque limit increase rate between said first speed and second speeds by interpolation.

6. (Original) An electric power assisted steering apparatus of claim 3 wherein said speed mapping device is arranged to generate, from said torque limit increase signal, said torque limit to be passed to said torque limiting device.

7. (Original) An electric power assisted steering apparatus of claim 6 wherein said speed mapping device is arranged to calculate a torque limit as increasing linearly at said torque limit increase rate.

8. (Original) An electric power assisted steering apparatus of claim 6 wherein said torque limit increases non-linearly.

9. (Original) An electric power assisted steering apparatus of claim 8 wherein said the rate at which said torque limit increases with time.

10. (Original) An electric power assisted steering apparatus of claim 8 wherein said speed mapping device includes an intermediate value generating device and a non-linear mapping device, where said intermediate value generating device generates an intermediate value which increases linearly at said torque limit increase rate and said non-linear mapping device is arranged to map said intermediate value to generate said torque limit using a non-linear map.

11. (Original) An electric power assisted steering apparatus of claim 10 in which said map is defined by at least three points defining a relationship between said intermediate value and said torque limit at those points, and in which successive pairs of points in increasing intermediate value have an increasing gradient between them.

12. (Original) The electric power assisted steering apparatus of claim 1 further comprising a filter to filter the measured vehicle speed, said filter being a low pass filter.

13. (Original) An electric power assisted steering apparatus of claim 1 further comprising an offset device, which take as an input the torque limit and combine the torque limit with an additive offset.

14. (Original) An electric power assisted steering apparatus of claim 1 further comprising a cap device, which cap the torque limit to a maximum value.

15. (Original) An electric power assisted steering apparatus for a vehicle having a steering wheel and road wheels, comprising:

a steering mechanism, which operatively connects said steering wheel to said road wheels of said vehicle;

an electric motor operatively connected to said steering mechanism;

a torque sensing device adapted to produce a first output signal indicative of a torque carried by a portion of said steering mechanism;

a signal processing unit adapted to receive said first signal and to produce a torque demand signal representative of a torque to be applied to said steering mechanism by said motor; and

a motor drive stage adapted to provide a drive current to said motor responsive to said torque demand signal,

wherein said apparatus includes a torque limiting device, arranged to limit the magnitude of said torque to be applied to said steering mechanism to a maximum of a value that increases from a first value to a second value at a rate that varies with time.

16. (Original) An electric power assisted steering apparatus of claim 15 in which said torque limiting device is arranged to limit the magnitude of said torque when said apparatus is powered-up.

17. (Currently Amended) An electric power assisted steering apparatus of claim 15 wherein said rate at which said torque limit varies increases with time.

18. (Original) An electric power assisted steering apparatus of claim 15 in which said torque limiting device includes an intermediate value generating device and a non-linear mapping device, wherein said intermediate value generating device is arranged to generate an intermediate value that increases linearly at a torque limit increase rate and said non-linear mapping device is arranged to map said intermediate value to generate said torque limit using a non-linear map.

19. (Original) An electric power assisted steering apparatus of claim 18 wherein said map is defined by at least three points defining a relationship between said intermediate value and said torque limit at those points, in which successive pairs of points in increasing intermediate value have an increasing gradient between them.

20. (Original) An electric power assisted steering apparatus of claim 15 further comprising a vehicle speed sensor for producing a second output signal indicative of a speed of said vehicle, in which said rate at which said torque limit increases is dependent upon said second output signal.